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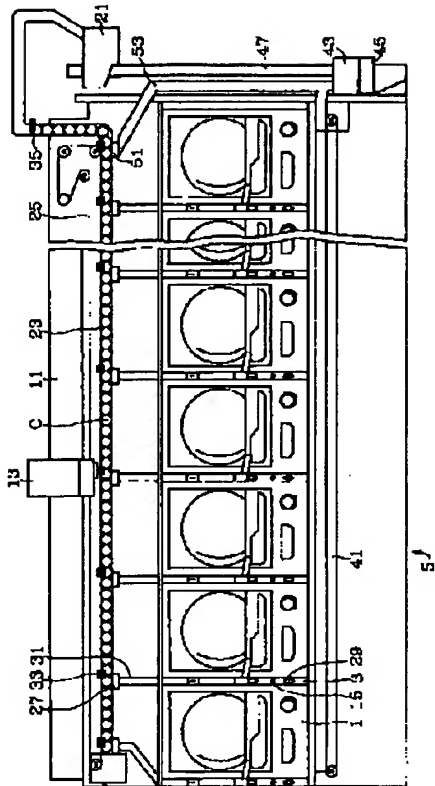
Summary

(57) [Abstract]

[Objects of the Invention] Be compact, make into the minimum the coin prepared for expenditure, and offer the coin expenditure equipment which can also make recovery of the coin easy.

[Elements of the Invention] The money-changing machine prepared in the game island 5 conveys in order the 500 yen coin sent out from the sending-out hopper 21 to a lower stream of a river with the conveyance belt 25, arranges it in a single tier, and is contained on the conveyance rail 23. Corresponding to the coin expenditure mouth 29, the expenditure shutter 27 and the coin expenditure path 31 are arranged in every place of the conveyance rail 23. If it calls, and a switch 15 is pushed, the bill injection machine 13 is called and the tag of 1000 yen is fed into the bill injection machine 13, the expenditure shutter 27 according to the injection position will be opened, and a coin will fall. counting -- detection of that two coins fell by the sensor 33 closes the expenditure shutter 27 The coin dropped from the expenditure shutter 27 is directly paid out to the predetermined coin expenditure mouth 29 through the coin discharge path 31.

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CLAIMS

[Claim(s)]

[Claim 1] Coin expenditure equipment which pays out coin, such as a coin and a medal for games, to the coin expenditure mouth which is characterized by providing the following, and which it has [machine / medal loan / the money-changing machine prepared in the game island, a game machine,] A coin conveyance means to convey coin from a coin tank to the upper part of each aforementioned expenditure mouth A distribution means for it to be prepared in every place of this

coin conveyance means, and to arrange the conveyed coin on each aforementioned expenditure mouth by direct counting which carries out counting of the number of the coin distributed by each distribution means, respectively — a means the coin of number of sheets according to the contents of directions of an expenditure directions means to direct expenditure of the coin to each aforementioned expenditure mouth, and this expenditure directions means — the above — counting — the distribution control means which operate the aforementioned distribution means until counting is carried out by the means

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application] this invention relates to the coin expenditure equipment which pays out a coin to the expenditure mouth of a money-changing machine, or pays out a medal to expenditure mouths, such as a slot machine and a medal loan machine.

[0002]

[Description of the Prior Art] The medal collection-and-delivery equipment in an amusement center is indicated by the former, for example, JP,4-448,Y. This medal collection-and-delivery equipment arranges a medal tank at the end of a game island, conveys a medal from the medal tank to the upper part of a game island, and it is constituted so that a medal may be supplied to each of a slot machine or a medal loan machine.

[0003] with this medal collection-and-delivery equipment, the medal for expenditure was stocked by the medal hopper with which each of the medal passage which is alike, respectively, and is gone and prolonged and each opportunity of a slot machine or a medal loan machine is equipped, the eccrisis mechanism of each slot machine or a medal loan machine which each builds in, respectively was operated, and the

medal of required number of sheets was paid out

[0004]

[Problem(s) to be Solved by the Invention] However, according to the conventional technology, there was a problem which is listed to below. First, since it had composition which stocks the medal for expenditure in each of each slot machine or a medal loan machine, all had to be doubled, or it had to become and a lot of medals had to be prepared as a stocked part.

[0005] Moreover, it takes [recovery] a help and time and was troublesome in order to have to collect medals from each of each opportunity to all collect the medals stocked by each slot machine and the medal loan machine. It was a very big problem that the recovery which applies the above-mentioned medal collection-and-delivery equipment, and needs the coin to prepare in large quantities especially in order to have to prepare the coin for exchange before opening of an amusement center and to have to collect them after closing, when it considers as the equipment which supplies the coin for exchange to a money-changing machine takes time and effort.

[0006] Furthermore, the medal hopper and the eccrisis mechanism had to be prepared in each, and the suitable space was required for the interior of each opportunity. For this reason, a compacter thing was desired, in order for the medal loan machine etc. to have become large-sized as a whole and to have installed in the narrow space between game machines.

[0007] Then, this invention is compact, can make the minimum the coin prepared for expenditure, and also aims recovery of the coin at offering the coin expenditure equipment which can be done easily.

[0008]

[Means for Solving the Problem] this invention made in order to attain the above-mentioned purpose To the coin expenditure mouth which it has [machine / medal loan / the money-changing machine prepared in the game island, a game machine,] A coin conveyance means to be coin expenditure equipment which pays out coin, such as a coin and a medal for games, and to convey coin from a coin tank to the upper part of each aforementioned expenditure mouth, A distribution means for it to be prepared in every place of this coin conveyance means, and to arrange the conveyed coin on each aforementioned expenditure mouth by direct, counting which carries out counting of the number of the coin distributed by each distribution means, respectively -- with a means the coin of number of sheets according to the content of directions of an expenditure directions means to direct expenditure of the coin to each aforementioned expenditure mouth, and this expenditure directions means -- the above -- counting -- it is characterized by having the distribution control means which operate the aforementioned distribution means until counting is carried out by the means

[0009]

[Function] the coin of number of sheets corresponding to the content of directions when expenditure of the coin to each expenditure mouth was directed according to

the coin expenditure equipment of this invention — counting — a distribution means operates until counting is carried out by the means, and coin is directly paid out of a coin conveyance means by each expenditure mouth

[0010] Here, when for example, this equipment is constituted as medal expenditure equipment for games, expenditure directions of a medal are taken out from each game machine or each medal loan machine side according to winning a prize with a game machine, an injection of the coin to a medal loan machine, etc. Moreover, when this equipment is constituted as coin expenditure equipment, expenditure directions of a coin are taken out from each money-changing machine or each medal loan machine according to the case where an injection of the bill and coin to a money-changing machine, a medal loan machine, etc. pay out change etc.

[0011]

[Example] Next, the example of this invention is explained based on a drawing. The coin distribution equipment as an example is constituted as a money-changing machine prepared in the game island 5 where two or more pachinko machines 1 and ball rental machines 3 were arranged by turns, as shown in drawing 1 .

[0012] The bill injection machine 13 moves this money-changing machine to the position where it called for calling the bill injection machine 13 and the bill injection machine 13 of the portable type attached in the orbit 11 prepared in the upper part of the game island 5 to every place of the game island 5, the switch 15 was had and called, and the switch 15 was pushed, and the bill which should be exchanged is received.

[0013] Moreover, the sending-out hopper 21 formed in the end upper part of the game island 5 in order to store the coin for exchange, The coin sent out from the sending-out hopper 21 is arranged in a single tier. The conveyance rail 23 which can be contained, The conveyance belt 25 which conveys the coin of the conveyance rail 23 to a lower stream of a river one by one, and the expenditure shutter 27 for paying out the conveyed coin to game island every place, The coin expenditure path 31 which leads the coin paid out of the expenditure shutter 27 to the coin expenditure mouth 29 in which it was prepared by the lower part of a ball rental machine 3, counting which carries out counting of the coin which passes each expenditure shutter 27 — by having a sensor 33 and the coin existence sensor 35 which detects the existence of the coin in a rail in the upper section of the conveyance rail 23, and carrying out switching action of the expenditure shutter 27 The coin of the conveyance rail 23 is paid out to the predetermined coin expenditure mouth 29. In addition, the coin expenditure mouth 29 serves also as the exhaust port when a poor coin is fed into a ball rental machine 3.

[0014] Furthermore, the recovery conveyer 41 arranged inside the game island 5 in order to collect the coins fed into each ball rental machine 3, The reservoir tank 43 arranged by the end lower part of the game island 5 in order to store the collected coin, It uses having the sending-out machine 45 which sends out the coin of the reservoir tank 43 little by little, and the lifter 47 which lifts the sent-out coin to the

above-mentioned sending-out hopper 21, and circulating the coin fed into the ball rental machine 3 as a coin for exchange.

[0015] Furthermore, it also has the recovery shutter 51 for collecting the coins of the conveyance rail 23 on the reservoir tank 43, and the coin recovery path 53 again. In addition, the money-changing machine of this example can throw in the tag of 1000 yen, and can exchange it for two 500 yen coins.

[0016] Next, it explains in more detail [about a characteristic portion] among each [these] composition. As shown in drawing 2 , the bill injection machine 13 is connected with the chain 62 stretched by the sprocket 61 of orbital 11 ends, and moves to right and left in accordance with an orbit 11 by making a chain 62 drive. The interior of an orbit 11 is made to correspond to the halt position of the bill injection machine 13, the position detection sensor 63 is arranged in it, and the move position detection plates 64a-64c are being fixed to the tooth-back side of the bill injection machine 13. These move position detection plates 64a-64c are formed at a time in one place and its right and left in the center of a tooth-back side of the bill injection machine 13 at one place [three], respectively, and each passes through between the light-emitting part of the position detection sensor 63, and light sensing portions, when the bill injection machine 13 moves. Control moved and stopped is performed in the position where the position on the orbit 7 of the bill injection machine 13 was detected, it called by this, and the switch 15 was pushed. [0017] Moreover, the slot for bills 65 for this bill injection machine 13 throwing in the bill to exchange, The bill identification unit 66 which carries out truth-or-falsehood distinction of the bill inserted from the slot for bills 65, face-value judgment, eccrisis of an imitation bill, sending of a regular bill, etc., The bill receipt box 67 which can be detached and attached freely, and the piece-of-paper transport device 68 which conveys a regular bill from the bill identification unit 66 to the bill receipt box 67, It has the drop 69 which displays the frame of the thrown-in bill, the message to a user, etc., and the bill concerned is received only when a predetermined bill (an example 1000 yen bill) is thrown in.

[0018] The sending-out hopper 21 is equipped with the feed disk 72 rotated by the motor which it is attached free [rotation on the inclined frame 71] as shown in drawing 3 (a) and (b), and is not illustrated, the pin 73 which protruded in the pitch suitable near [periphery] the feed disk 72, and the housing 74 which is prepared so that the feed disk 72 may be surrounded, and is put into a coin inside. Step 72a by which the periphery neighborhood of the feed disk 72 was made lower than a center section by the thickness of one coin is formed, and the pin 73 is arranged at this step 72a. If the rotation drive of the feed disk 72 is carried out in the direction of an illustration arrow, a coin is hooked on a pin 73, it will show around at the inside of housing 74, and step 72a, one sheet will be conveyed at a time, and it will extrude along with a guide 75 to the conveyance rail 23.

[0019] As the coin which it arranged one conveyance rail 23 in inside at a time, it had contained inside the coin C sent out from the sending-out hopper 21 as shown

in drawing 1 , and was contained here is shown in drawing 4 and drawing 5 , the upper-limit portion is in contact with the conveyance belt 25. As an arrow shows to drawing 4 , a circulation drive is carried out, and this conveyance belt 25 is conveyed toward the direction of down-stream (left of drawing 4), rolling Coin C on the conveyance rail 23. Moreover, the coin existence sensor 35 is arranged at the upper section of the conveyance rail 23 as shown in drawing 1 . This coin existence sensor 35 is the photosensor turned on [photosensor], when between the floodlighting section and light sensing portions is interrupted in Coins C, and when this sensor is turned on, it is judged in the conveyance rail 23 that Coin C has filled. The above-mentioned sending-out hopper 21 will be operated if this coin existence sensor 35 is turned off [it], and it sends out a coin to the conveyance rail 23.

[0020] The expenditure shutter 27 and the coin expenditure path 31 for discharging a coin are established in every place of this conveyance rail 23. The expenditure shutter 27 is equipped with the chute combination shutter 81 which closes coin exhaust port 23a formed in the conveyance rail 23 by upper-limit section 81a, the guide frame 82 which surrounded the chute combination shutter 81 and was prepared, and the solenoid 84 which rotates the above-mentioned chute combination shutter 81 and a guide frame 82 centering on the supporting point 83 as it is shown in drawing 4 and drawing 5 . If the chute combination shutter 81 rotates, Coin C falls from coin exhaust port 23a of the conveyance rail 23 and energization is stopped as it is shown in drawing 6 , when it energizes to a solenoid 84, with a spring 85, the chute combination shutter 81 will be returned to the rotation position of drawing 5 , and will close coin exhaust port 23a.

[0021] the number of sheets of the coin C which falls from coin exhaust port 23a by this switching action — counting of coin exhaust port 23a which is up a little — it is counted by the sensor 33 counting — a sensor 33 is a reflected type photosensor, and when it is turned on in response to the reflected light from Coin C when Coin C is on the conveyance rail 23 (refer to drawing 5), and there is no coin C on the conveyance rail 23 (refer to drawing 6), since there is no reflection in Coin C, it is that it is turned off Therefore, by taking a count to the timing which was turned off shows expenditure number of sheets.

[0022] The coin C dropped from coin exhaust port 23a is led to the chute combination shutter 81, and goes into the coin expenditure path 31. The coin expenditure path 31 is arranged so that the coin C which up 31a was made the wide mouth and thought to be easy to receive Coin C may be led to the coin expenditure mouth 29 in the lower part of each ball rental machine 3 shown in drawing 1 . Moreover, in the middle of this coin expenditure path 31, the expenditure check sensor 91 is arranged as shown in drawing 4 - drawing 6 . The expenditure check sensor 91 is the photosensor arranged so that the falling coin C may pass through between the floodlighting section and light sensing portions, and in order that Coin C may check whether as planned has carried out number-of-sheets passage, it is formed.

[0023] In addition, the conveyance place of a coin is constituted for the recovery shutter 51 and the coin recovery path 53 as well as [almost] the expenditure shutter 27 and the coin expenditure path 31 except for the reservoir tank 43 and the bird clapper. In the above composition, the recovery conveyer 41 shown in drawing 1 carries out a continuation operation by powering on, and is collecting the coins fed into the ball rental machine 3 to the reservoir tank 43. Moreover, it will operate, if the coin of a lifter 47 in the sending-out hopper 21 becomes less than predetermined, and a certain amount of quantity of the coin is always made to be stored in the sending-out hopper 21. Furthermore, the bill injection machine 13, the conveyance belt 25, each expenditure shutter 27, and the recovery shutter 51 have operation controlled by the electronic control 101 explained below.

[0024] The drive circuit 105 for bill injection machine movement which drives the motor for moving the bill injection machine 13 in accordance with an orbit 11 etc., the drive circuit 107 for conveyance belts which carries out drive control of the conveyance belt 25, the drive circuit 109 for expenditure shutters which carries out switching action of the expenditure shutter 27, and the drive circuit 111 for recovery shutters which carry out the switching action of the recovery shutter 51 are connected, and a driving signal outputs to each circuit as shown in an electronic control 101 at drawing 7 . Moreover, the receipt of a regular bill, the input of the signal which shows malfunction generating, the output of the signal which shows the completion of expenditure of a coin, etc. output [the bill injection machine 13 is connected and] and input a signal mutually. furthermore, the bill sensor 121 which detects bill receipt completion with the bill injection machine 13, each position detection sensor 63 which detects the move position of the bill injection machine 13, the coin existence sensor 35 which detect the shortage of a receipt coin of the conveyance rail 23, and expenditure number of sheets count — each — counting — the expenditure check sensor 91 grade which checks whether expenditure has been performed normally is connected with a sensor 33, and the detecting signal of these sensors is inputted, respectively In addition, this electronic control 101 is the logic operation circuit constituted focusing on CPU, well-known ROM, well-known RAM, etc.

[0025] Next, operation of the money-changing machine controlled by this electronic control 101 is explained. It is made for the coin to always have come in the conveyance rail 23 by coin restoration processing which shows this money-changing machine in drawing 8 .

[0026] First, an electronic control 101 checks for a coin at the conveyance rail 23 based on the detecting signal of the coin existence sensor 35, as shown in drawing 8 (S10). Since a coin is not filled at the time of starting of a money-changing machine but the coin existence sensor 35 becomes off (S10:NO), an electronic control 101 operates the sending-out hopper 21 (S20), and also operates the conveyance belt 25 (S30). Consequently, one coin is sent out at a time to the conveyance rail 23, and a coin is tightly put in order by the conveyance rail 23. Next, based on the detecting

signal of the coin existence sensor 35, it checks for a coin again at the conveyance rail 23 (S40). If a coin is sent out one by one and got blocked to the position of the coin existence sensor 35, since the coin existence sensor 35 will be turned on (S40:YES), the sending-out hopper 21 is stopped (S50), and the conveyance belt 25 is also stopped (S60). Consequently, in the conveyance rail 23, the coin sent out by the time the sending-out hopper 21 stopped is got blocked. It returns to S10 henceforth, and whenever it decreases beyond the grade out of which the coin in the conveyance rail 23 is paid, processing after S20 is performed.

[0027] Whenever it calls and a switch 15 is pushed apart from the above processing, exchange processing of drawing 9 is performed. In exchange processing, as shown in drawing 9, bill injection machine move processing for which the bill injection machine 13 is moved to the position where it called and the switch 15 was pushed first is performed (S100). The content of this move processing of S100 becomes the processing shown in drawing 10 in detail.

[0028] First, in order to already stop the bill injection machine 13 in one of halt positions, it investigates whether check processing of a halt position is under execution (S110), and judges about the ability of the bill injection machine 13 to perform acceptance of a bill (S120). It stands by until the processing concerned will be completed, if it is [check / of a halt position] under processing (S110:YES), and it stands by until it will be in the state where bill acceptance can be performed, according to causes, like external covering of the bill injection machine 13 is open, if it is in the state which cannot perform acceptance of a bill (S120:NO).

[0029] Check processing is completed by S110,120, and when it is judged that it is in a bill acceptance state, (S110:NO, S120:YES), and distinction of the present halt position which calls, distinguishes a position (S130) and has subsequently been stopped now with which it called and the switch 15 was pushed are performed (S140). And based on these distinction results, the move direction of the bill injection machine 13 is determined, and the travel is computed (S150).

[0030] Next, the driving signal according to the above-mentioned move direction and distance is outputted to the drive circuit 105 for bill injection machine movement, the bill injection machine 13 is moved (S160), it calls whether the bill injection machine 13 called and it arrived at the position, and it is judged from the detecting signal of the position detection sensor 63 corresponding to a position (S170). although only the distance computed by S150 moved the bill injection machine 13 from the position detection sensor 63 here when there was no detecting signal — the — since it calls and has not arrived at a position, that is displayed on a drop 69 as the position detection sensor 63 concerned being unusual (S180), and this routine is once ended

[0031] if the pushed position detection sensor 63 corresponding to [call and] a switch 15 to a detecting signal is inputted, ***** the bill injection machine 13 will call and it will arrive at a position on the other hand — being concerned — it calls, while resetting a switch 15, the output of the above-mentioned driving signal is

suspended (S190), the bill injection machine 13 is called, and a position is stopped. Here, when the bill injection machine 13 moves to the right and right move position detection plate 64c interrupts between the light-emitting part of the position detection sensor 63, and light sensing portions in drawing 2, the driving signal to the drive circuit 105 is stopped, and further, when central move position detection plate 64b interrupts between the light-emitting part of the position detection sensor 63, and light sensing portions, the brake with which the motor for a drive is equipped is operated. Thus, by stopping the bill injection machine 13, the shock which is stabilized, and can make a halt position a fixed position, and joins the bill injection machine 13 at the time of a halt can also be eased.

[0032] in addition, when call, a switch 15 is pushed, a certain others which are on the moving trucking to a target position while the bill injection machine 13 moves call towards the position and a switch 15 is pushed. If the bill injection machine 13 has not passed through the position, after calling, making the position corresponding to a switch 15 pushed later first suspend the bill injection machine 13 and carrying out exchange operation, it is constituted so that it may be made to move to the position where it called previously anew and the switch 15 was pushed.

[0033] Now, after finishing move processing [in / drawing 9 / as mentioned above] of S100, bill injection processing in which the bill fed into the bill injection machine 13 next is received is performed (S200). This bill injection processing of S200 turns into processing shown in drawing 11 in detail. first, truth-or-falsehood distinction of the bill which outputted the driving signal to the drive circuit 103 for the bill receipt sections, and was inserted in the bill injection machine 13 when it stood by in order to receive a bill (S210), and the bill was thrown in (S210:YES), face-value judgment, eccrisis of an imitation bill, sending of a regular bill, and conveyance of a regular bill -- and it raises and - receipt etc. is performed (S220). In addition, these processings are the same as acceptance processing of the bill in a well-known money-changing machine, in the example, distinguish only the tag of 1000 yen and are accepted.

[0034] In this way, after finishing the bill injection processing of S200 in drawing 9 next, coin expenditure processing which pays out the coin of number of sheets according to the face value of the received bill is performed (S300). This coin expenditure processing of S300 comes to be shown in drawing 12 in detail. First, a driving signal is outputted to the drive circuit 107 for conveyance belts, and the conveyance belt 25 is operated (S310). And the expenditure shutter 27 according to the position where the driving signal was outputted and called to the drive circuit 109 for expenditure shutters, and the switch 15 was pushed is opened (S320).

Consequently, the coin which suited right above the expenditure shutter 27 falls, and the next coin is sent to the position in order with the conveyance belt 25. The next coin here is a coin on the right in drawing 4. In the example, since the coin on the left is energized leftward with the conveyance belt 25, rightward, it does not roll. That is, in an example, while the conveyance belt 25 is a means to convey a coin to a downstream, it is acting also as a reversion prevention means to energize so that

a coin may not return.

[0035] next, predetermined number-of-sheets expenditure of the coin is carried out -- counting -- it counts by the sensor 33 (S330) since only two coins of 500 yen are paid out in the example -- the 1st coin -- falling -- counting -- a sensor 33 becomes off and the following coin conveys -- having -- counting -- a sensor 33 -- ON -- becoming -- further -- the coin -- falling -- counting -- when a sensor 33 is turned off, it can judge with two coins having paid out in addition, expenditure number of sheets counts also by the expenditure check sensor 91 simultaneously at this time -- having -- counting -- the case where it differs from the number of counts of a sensor 33 -- a coin -- on the way -- it comes out, and since it may have been caught, an error code to that effect is displayed on a drop 69, and acceptance of a bill is stopped

[0036] In this way, if the coin of predetermined number of sheets is paid out, the driving signal to the drive circuit 109 for expenditure shutters will be stopped, and the open expenditure shutter 27 will be shut (S340). And the conveyance belt 25 is also stopped (S350). Exchange in the position where it called and the switch 15 was pushed by the above processing finishes.

[0037] Now, below, recovery of the coin for exchange contained by the conveyance rail 23 is explained. Recovery of a coin is the control which will be performed if the recovery switch which is not illustrated is pushed, and is performed by the coin recovery processing shown in the flow chart of drawing 13 . First, if this processing is started, a driving signal will be outputted to the drive circuit 111 for recovery shutters, and the recovery shutter 51 will be opened (S410). And the driving signal of an inversion is outputted to the drive circuit 107 for conveyance belts, and it is made to operate so that the conveyance belt 25 may be rotated reversely with usual (S420). Consequently, the coin contained by the conveyance rail 23 is conveyed in order to the recovery shutter 51, and is dropped to the reservoir tank 43 from here through the coin recovery path 53. And it waits for a predetermined time required for recovery to pass (S430), the driving signal to the drive circuit 107 for conveyance belts is stopped, and the conveyance belt 25 is stopped (S440). And the driving signal to the drive circuit 111 for recovery shutters is also stopped, and the recovery shutter 51 is closed (S450).

[0038] Since it was made to drop a coin from the conveyance rail 23 directly to the coin expenditure mouth 29 according to the money-changing machine of this example as explained above, it is not necessary to stock the coin for exchange in each corresponding to the coin expenditure mouth 29. Therefore, compared with the case where the coin for exchange is stocked, the whole amount of stocks becomes good at least at each.

[0039] moreover, since what is necessary is just to collect from one place of the conveyance rail 23, and to collect in recovery of a coin, compared with the case where the coin is stocked for every expenditure mouth, it is markedly alike, and recovery becomes easy Since it also had composition easily especially recoverable

to one reservoir tank 43 in the example, recovery of a coin takes neither a help nor time further.

[0040] Furthermore, since it is not necessary to prepare the hopper and discharge mechanism for expenditure coins in the narrow space of pachinko machine 1 comrades, even if narrow, a money-changing machine can be installed easily. Especially, in the example, since the coin expenditure mouth 29 is used also [exhaust port / poor coin / of a ball rental machine 3] while making the bill injection machine 13 into a portable type, the coin expenditure portions of a ball rental machine 3 and this money-changing machine have been settled between bases very compactly. Therefore, a game person can use a pachinko machine, without standing a seat at all.

[0041] Although the example of this invention was explained above, this invention is not limited to this but can adopt the mode within the limits which do not deviate from the summary of this invention which becomes various. For example, although it constituted from an example so that an error might be displayed and exchange might be stopped when expenditure of a coin was not able to be checked by the expenditure check sensor 91, the expenditure shutter 27 is re-operated over 1 time or abundance, and you may make it urge expenditure. However, it is better to carry out like an example, in order not to discharge many coins too much accidentally.

[0042] Moreover, although it constituted from an example so that the coin of predetermined number of sheets might pay out by closing the expenditure shutter 29 to suitable timing, if it constitutes so that the conveyance belt 25 may be operated to the grade by which only the coin of predetermined number of sheets is conveyed using a stepping motor, it is not necessary to control to close the expenditure shutter 27 to specific timing.

[0043] In addition, although it is made for the coin of a downstream to have not returned by driving the conveyance belt 25 in the example in the case of coin expenditure, as this reversion prevention means, the conveyance rail 23 is made to incline so that it may fall toward a downstream, and may only be arranged.

[0044] Moreover, although the sending-out hopper 21 was formed in the end upper part of a game island in the example in order to store the coin for exchange, this hopper is installed into the office of an amusement center, and you may make it send out a coin to each game island. Furthermore, although the example showed the conveyance rail 23 conveyed while standing a coin, arranging to a single tier and rolling, the conveyance method in the upper part of the game island 5 is not restricted to this at all. For example, the various methods of common knowledge, such as extruding on a rail, laying down a coin horizontally and sliding it, or putting on a belt conveyor and conveying in order, are employable.

[0045] Furthermore, although the example showed the money-changing machine which exchanges the tag of 500 yen of 1000 yen for two coins again, 5000 yen and 10000 yen acceptance may be enabled, or may be used as the money-changing machine exchanged for a coin. [of 100 yen] Moreover, even if it does not make a

bill injection machine into a portable type, you may be the bill injection machine of the common knowledge fixed between the pachinko machines 1. Moreover, although the coin expenditure mouth 29 was formed in the lower part of a ball rental machine 3, you may make it pay out the coin expenditure mouth 29 in the example to the saucer which could prepare in the pachinko machine 1 and was prepared in the game island 5 at exclusive use besides it.

[0046] Furthermore, in addition, you may constitute as expenditure equipment of the medal for games used with medal game machines, such as not only a money-changing machine like an example but a slot machine. In this case, the expenditure shutter which pays out a medal to a slot machine, and the expenditure shutter which pays out a medal to the medal loan machine between bases are formed in a conveyance rail, respectively, counting of the required number of sheets is carried out by the sensor like an example, and a coin is directly paid out to the expenditure mouth of each opportunity. In the case of a slot machine, output a signal at the time of winning a prize, and a premium medal is made to pay out, and the case of a medal loan machine makes the medal of necessary number of sheets pay out, when receiving an injection of money and a prepaid card.

[0047] In addition, in an example, when the coin which may be fed into a ball rental machine 3 is two kinds such as for example, a 100 yen coin and a 500 yen coin, a coin sorting machine is installed between the recovery conveyer 41 and the reservoir tank 43, and it is good for the reservoir tank 43 to make it only a coin enter 500 yen.

[0048]

[Effect of the Invention] Since the coin or medal for expenditure are not stocked in each of a money-changing machine, or a slot machine and a medal loan machine like the above according to this invention, it is not necessary to prepare a lot of medals as a stocked part.

[0049] Moreover, since what is necessary is to collect only from a conveyance means to all collect the coins and medals which were stocked even if it does not collect from each of a money-changing machine, or a slot machine and a medal loan machine, recovery takes neither a help nor time. Furthermore, since it is necessary to build neither a medal hopper nor a discharge mechanism in each of a money-changing machine, or a slot machine and a medal loan machine, a money-changing machine etc. becomes compact and it can install also in a narrow space easily.

[Translation done.]

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2.*** shows the word which can not be translated.

3.In the drawings, any words are not translated.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the block diagram showing the whole money-changing machine of an example.

[Drawing 2] It is the block diagram showing the bill injection machine in an example.

[Drawing 3] It is the block diagram showing the sending-out hopper in an example.

[Drawing 4] It is the front view showing the conveyance rail and expenditure shutter in an example.

[Drawing 5] It is the cross section which saw the conveyance rail and expenditure shutter in an example from the right.

[Drawing 6] It is the cross section which saw from the right the conveyance rail and expenditure shutter in the state where the expenditure shutter was opened.

[Drawing 7] It is a block diagram showing the composition of the control circuit of an example.

[Drawing 8] It is the flow chart of coin restoration processing of an example.

[Drawing 9] It is the flow chart of exchange processing of an example.

[Drawing 10] It is the flow chart of bill injection machine move processing of an example.

[Drawing 11] It is the flow chart of bill injection processing of an example.

[Drawing 12] It is the flow chart of coin expenditure processing of an example.

[Drawing 13] It is the flow chart of coin recovery processing of an example.

[Description of Notations]

1 [... A game island, 11 / ... Orbit,] ... A pachinko machine, 3 ... A ball rental machine, 5 13 [... Sending-out hopper,] ... A bill injection machine, 15 ... It calls and is a switch and 21. 23 [... Conveyance belt,] ... A conveyance rail, 23a ... A coin exhaust port, 25 27 [... Coin expenditure path,] ... An expenditure shutter, 29 ... A coin expenditure mouth, 31 31a ... the upper part and 33 ... counting -- a sensor and 35 ... a coin existence sensor -- 41 [... Sending-out machine,] ... A recovery conveyer, 43 ... A reservoir tank, 45 47 [... Coin recovery path,] ... A lifter, 51 ... A recovery shutter, 53 61 [... Position detection sensor,] ... A sprocket, 62 ... A chain, 63 64a-64c ... A move position detection plate, 65 ... Slot for bills, 66 [... Piece-of-paper transport device,] ... A bill identification unit, 67 ... A bill receipt box, 68 69 [... Feed disk,] ... A drop, 71 ... A frame, 72 73 [... A guide, 81 / ... Chute combination shutter,] ... A pin, 74 ... Housing, 75 82 [... A solenoid, 85 / ... Spring,] ... A guide frame, 83 ... The supporting point, 84 91 [... The drive circuit for bill injection

machine movement, 107 / ... The drive circuit for conveyance belts, 109 / ... The drive circuit for expenditure shutters, 111 / ... The drive circuit for recovery shutters, C / ... Coin.] ... An expenditure check sensor, 101 ... An electronic control, 105

[Translation done.]

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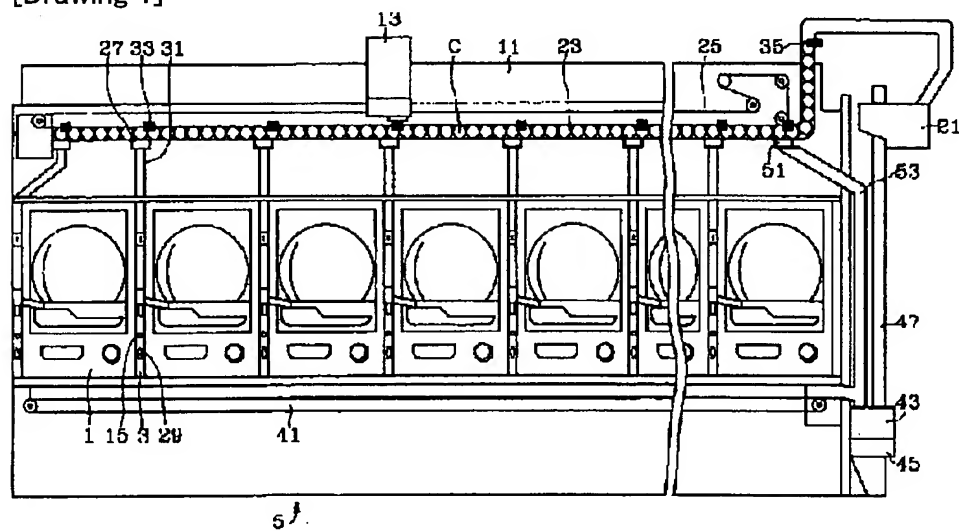
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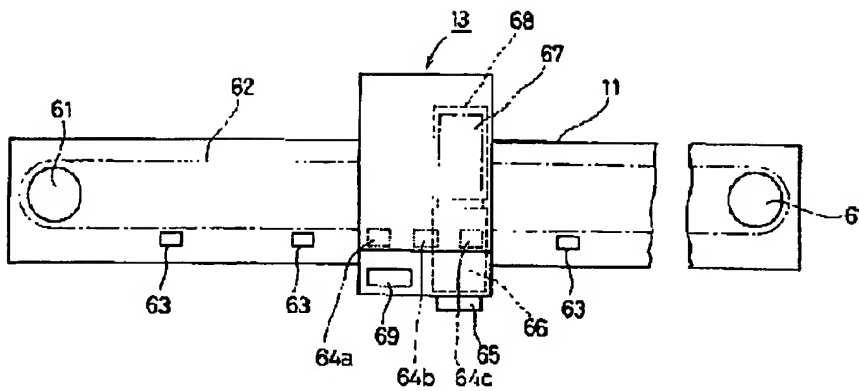
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DRAWINGS

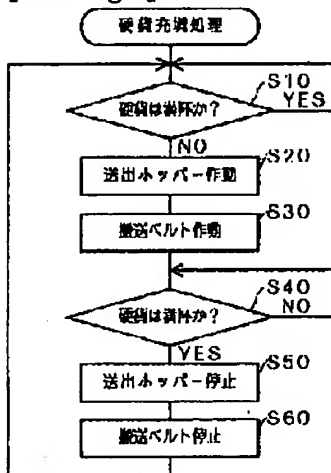
[Drawing 1]



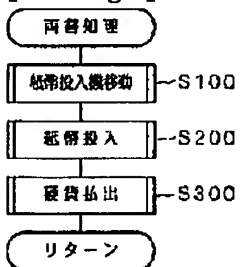
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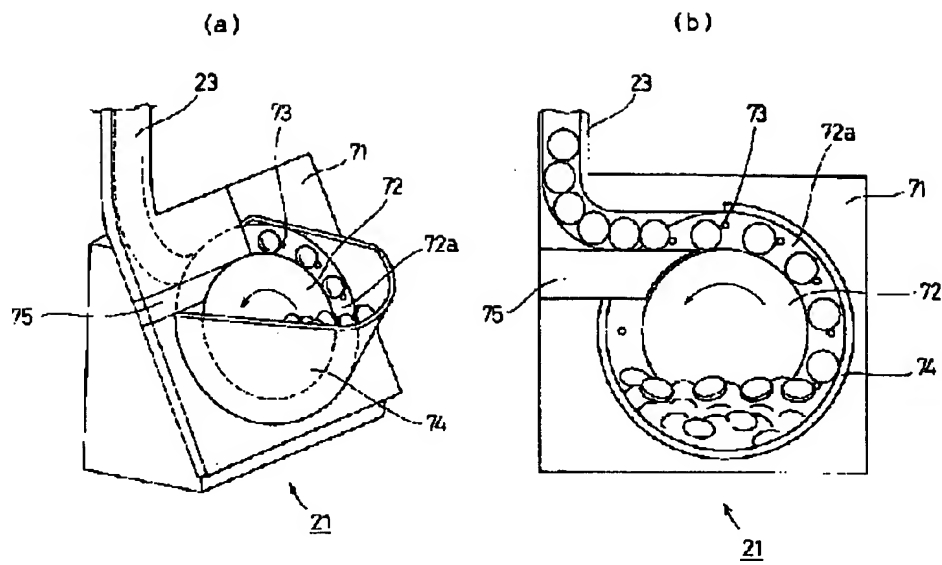
[Drawing 8]



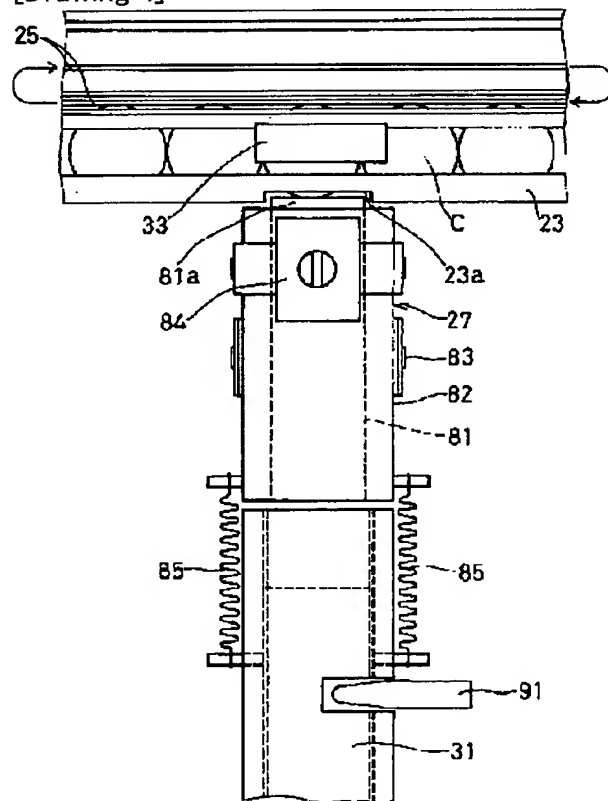
[Drawing 9]



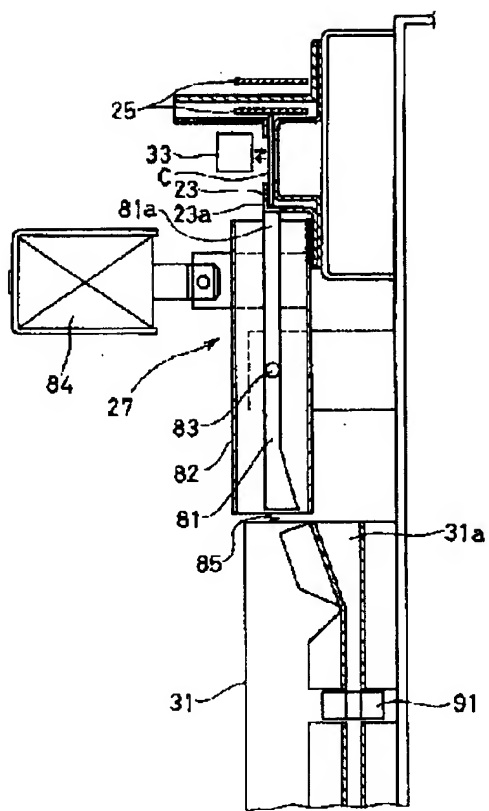
[Drawing 3]



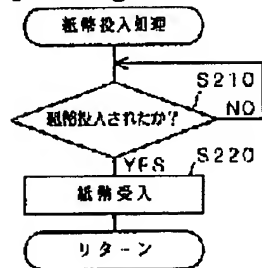
[Drawing 4]



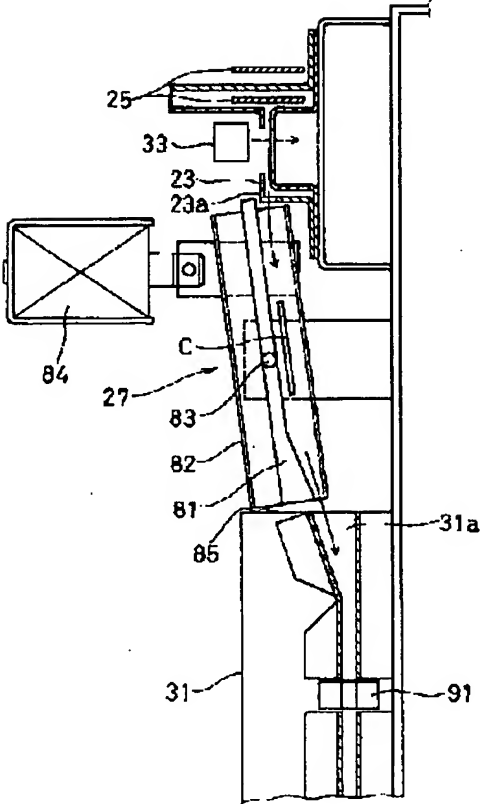
[Drawing 5]



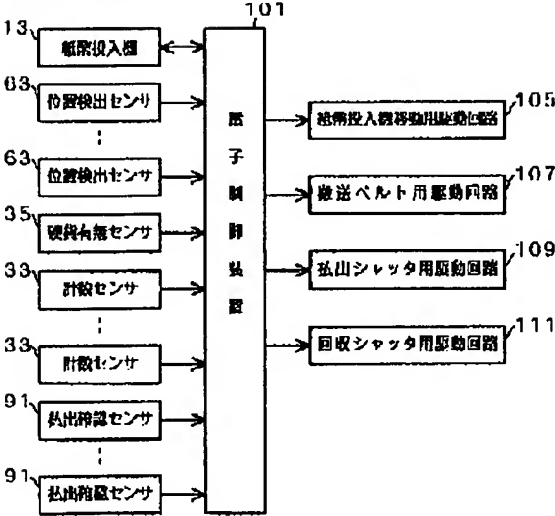
[Drawing 11]



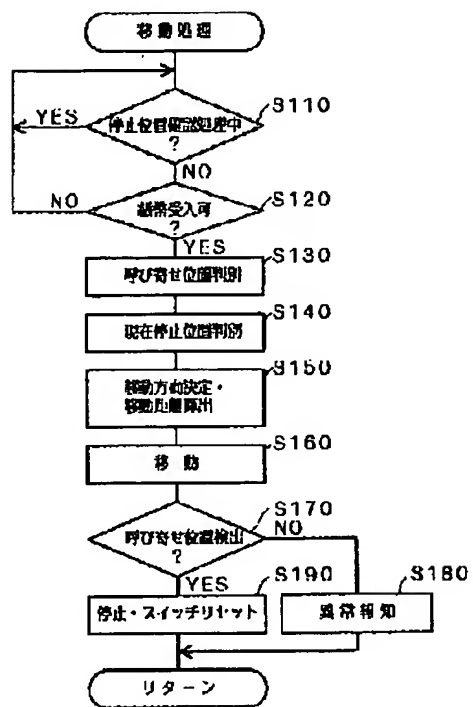
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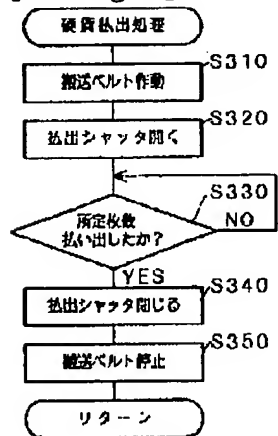
[Drawing 7]



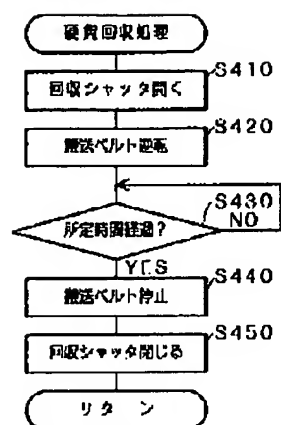
[Drawing 10]



[Drawing 12]



[Drawing 13]



[Translation done.]